

I claim:

1. A liquid transfer pump comprising
  - a. a unitary housing;
  - b. a motor disposed within a first portion of said housing, said motor including a  
5 rotatable drive shaft;
  - c. a pump cavity formed in a second portion of said housing, said cavity having an  
open end and an outlet port;
  - d. a volute chamber having an open end, said volute chamber formed within said  
pump cavity;
  - 10 e. a rotatable impeller disposed within said volute chamber and operatively engaged  
with said rotatable drive shaft of said motor; and
  - f. a cover attached to said open end of said pump cavity and engaged with said open  
end of said volute chamber to form a volute.
2. The liquid transfer pump as recited in claim 1, further comprising an exclusionary plate  
15 disposed within said volute chamber, said rotatable drive shaft of said motor extending  
through a hole formed in said exclusionary plate.
3. The liquid transfer pump as recited in claim 2, further comprising an annular region  
formed in said housing within said pump cavity, said annular region enclosing a seal flood  
region.
- 20 4. The liquid transfer pump as recited in claim 3, wherein said annular region formed in said  
housing has a first passageway between said pump cavity and said seal flood region and a  
second passageway between said pump cavity and said seal flood region.

5. The liquid transfer pump as recited in claim 4, wherein said volute chamber comprises a wall, and wherein a port is formed through said wall of said volute chamber.
6. The liquid transfer pump as recited in claim 1, wherein said volute comprises an exit flare.
- 5 7. The liquid transfer pump as recited in claim 6, wherein said pump cavity further comprises a baffle disposed above said exit flare of said volute.
8. The liquid transfer pump as recited in claim 1, wherein said cover comprises an inlet port, a cavity, and an outlet port proximate to said impeller.
9. The liquid transfer pump as recited in claim 8, wherein said cover further comprises an  
10 inner face, said impeller further comprises a vane face, and said inner face of said cover and said vane face of said impeller are substantially parallel to each other.
10. The liquid transfer pump as recited in claim 1, wherein said second portion of said housing further comprises a filling port comprising a threaded bore.
11. The liquid transfer pump as recited in claim 10, wherein said filling port further  
15 comprises a funnel shape disposed above said threaded bore.
12. The liquid transfer pump as recited in claim 11, further comprising a threaded plug engaged with said threaded bore.
13. The liquid transfer pump as recited in claim 12, wherein said plug further comprises a seal engaged with said filling port.
- 20 14. The liquid transfer pump as recited in claim 1, wherein said unitary housing further comprises a handle.
15. The liquid transfer pump as recited in claim 1, wherein said unitary housing is formed of aluminum alloy.

16. A liquid transfer pump comprising

- a. a unitary housing;
- b. a motor disposed within a first substantially cylindrical portion of said housing; said first portion of said housing comprising an open end, a first air inlet opening and a first air outlet opening;
- c. a pump cavity formed in a second portion of said housing; and
- d. a cover attached to said open end of said first portion of said housing.

17. The liquid transfer pump as recited in claim 16, wherein said motor further comprises a fan operatively engaged to a rotatable drive shaft.

18. The liquid transfer pump as recited in claim 17, wherein said substantially cylindrical portion of said housing comprises a volute cavity.

19. The liquid transfer pump as recited in claim 18, wherein said volute cavity comprises a first volute and a second volute.

20. The liquid transfer pump as recited in claim 19, wherein said substantially cylindrical portion of said housing comprises a first opening proximate to said first volute and a second opening proximate to said second volute.

21. The liquid transfer pump as recited in claim 20, further comprising a drain hole in the bottom of said volute cavity.

22. The liquid transfer pump as recited in claim 21, further comprising a circumferential ridge proximate to said volute cavity.

23. The liquid transfer pump as recited in claim 16, wherein said cover is unitary.

24. The liquid transfer pump as recited in claim 23, wherein said cover further comprises an inlet opening.

25. The liquid transfer pump as recited in claim 16, wherein said first substantially cylindrical portion of said housing comprises at least one axial rib.

26. The liquid transfer pump as recited in claim 16, wherein said first substantially cylindrical portion of said housing comprises at least one arcuate rib having an end forming a portion of a passageway thereby..

27. The liquid transfer pump as recited in claim 16, wherein said unitary housing further comprises a handle.

28. The liquid transfer pump as recited in claim 16, wherein said unitary housing is formed of aluminum alloy.

29. A liquid transfer pump comprising

a. a unitary housing;

b. a motor disposed within a first substantially cylindrical portion of said housing; said first substantially cylindrical portion of said housing comprising an open end, and a first air outlet opening;

c. a pump cavity formed in a second portion of said housing; and

d. a cover attached to said open end of said first portion of said housing, said cover comprising an outer surface, an inner surface, and a first inlet opening.

30. The liquid transfer pump as recited in claim 29, wherein said motor further comprises a fan operatively engaged to a rotatable drive shaft.

31. The liquid transfer pump as recited in claim 30, wherein said cover further comprises a first cover plate covering a portion of said first inlet opening.

32. The liquid transfer pump as recited in claim 31, wherein said first inlet opening further comprises a first baffle.

33. The liquid transfer pump as recited in claim 32, wherein said cover further comprises a second cover plate covering a portion of a second inlet opening, said second inlet opening comprising a second baffle.

34. The liquid transfer pump as recited in claim 29, wherein said cover further comprises a  
5 first ear with a first port and a second ear with a second port.

35. The liquid transfer pump as recited in claim 34, wherein said first port of said first ear comprises a first threaded bore and said second port of said second ear comprises a second threaded bore.

36. The liquid transfer pump as recited in claim 35, further comprising a first motor brush  
10 disposed in said first port in said first ear, and a second motor brush disposed in said second port in said second ear.

37. The liquid transfer pump as recited in claim 36, further comprising a first threaded cap disposed in said first port in said first ear, and a second threaded cap disposed in said second port in said second ear.

15 38. The liquid transfer pump as recited in claim 29, wherein said cover consists essentially of plastic.

39. The liquid transfer pump as recited in claim 29, wherein said cover further comprises a shaft opening.

40. The liquid transfer pump as recited in claim 29, wherein said cover further comprises a  
20 switch opening, and said pump further comprises a switch disposed in said switch opening.

41. The liquid transfer pump as recited in claim 29, wherein said cover further comprises a cord opening, and said pump further comprises a cord assembly disposed in said cord opening.

42. The liquid transfer pump as recited in claim 29, wherein said inner surface of said cover further comprises an arcuate rib.

43. The liquid transfer pump as recited in claim 29, wherein said inner surface of said cover further comprises a reinforcement rib.

5 44. The liquid transfer pump as recited in claim 29, wherein said cover further comprises a flange with at least one hole therethrough.

45. The liquid transfer pump as recited in claim 29, wherein said cover further comprises a bearing race formed therein.

46. The liquid transfer pump as recited in claim 29, wherein said inner surface cover of said  
10 cover further comprises a first fastener hole and a second fastener hole.

47. The liquid transfer pump as recited in claim 29, wherein said open end of said first substantially cylindrical portion of said housing cover further comprises a first taper, and wherein said cover further comprises a second taper engaged with said first taper of said open end of said first substantially cylindrical portion of said housing.

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